CLAIMS

1. A color scintillator comprising: an optical substrate having bundled optical fibers; an acicular scintillator provided with the optical substrate, the acicular scintillator havng either of an acicular crystal structure and a columnar crystal structure, the acicular scintillator reacting with at least one of an electromagnetic wave and a radial ray into light emitting; and a coating scintillator coating the acicular scintillator, the coating scintillator reacting with at least one of another electromagnetic wave and another radial ray which differ in either of an energy and a type from the electromagnetic wave and the radial ray reacting with the acicular scintillator into light emitting in a different color from an emitting color in the acicular scintillator.

2. A color scintillator comprising: an optical substrate having bundled optical fibers; an acicular scintillator provided with the optical substrate, the acicular scintillator havng either of an acicular crystal structure and a columnar crystal structure, the acicular scintillator reacting with at least one of an electromagnetic wave and a radial ray into light emitting; and a coating scintillator coating the acicular scintillator, the coating scintillator reacting with at least one of another electromagnetic wave and another radial ray which differ in either of an energy and a type from the electromagnetic wave and the radial ray reacting with the acicular scintillator into light emitting in a different emission lifetime from that in the acicular

scintillator.

3. A color scintillator comprising: an optical substrate having bundled optical fibers; an acicular scintillator provided with the optical substrate, the acicular scintillator havng either of an acicular crystal structure and a columnar crystal structure, the acicular scintillator reacting with at least one of an electromagnetic wave and a radial ray into light emitting; and a coating scintillator coating the acicular scintillator, the coating scintillator reacting with at least one of another electromagnetic wave and another radial ray which differ in either of an energy and a type from the electromagnetic wave and the radial ray reacting with the acicular scintillator into light emitting in a different color and a different emission lifetime from those in the acicular scintillator.

4. A color scintillator comprising: an optical substrate having bundled optical fibers; an acicular scintillator provided with the optical substrate, the acicular scintillator havng either of an acicular crystal structure and a columnar crystal structure, the acicular scintillator reacting with at least one of an electromagnetic wave and a radial ray into light emitting; and a coating scintillator coating the acicular scintillator, the coating scintillator reacting with at least one of another electromagnetic wave and another radial ray which differ in either of an energy and a type from the electromagnetic wave and the radial ray reacting with the acicular scintillator into light emitting in a different emitting condition from that in the

acicular scintillator.

5. An image sensor comprising: a color scintillator according to one of claim 1, 2 and 3; and a photosensor receiving light generated by the color scintillator to convert the light into an electrical signal, the photosensor having a timing adjustment mechanism which adjusts a timing to receive the light and a filtering mechanism sorting the light by wavelength.

6. An image sensor comprising: a color scintillator according to one of claim 1, 2 and 3; a photosensor receiving light generated by the color scintillator to convert the light into an electrical signal; an electrical-signal-amplify-means for amplifying the electrical signal by accelerating electrons with an operation of an electric field; and an output scintillator converting the electrical signal amplified by the electrical-signal-amplify-means into an image.

7. An image sensor comprising: a color scintillator according to one of claim 1, 2 and 3; a photosensor receiving light generated by the color scintillator to convert the light into an electrical signal, the photosensor having a photoelectric face of which a curvature forms an electron lens; an electrical-signal-amplify-means for amplifying the electrical signal by accelerating electrons with an operation of an electric field; and an output scintillator converting the electrical signal amplified by the electrical-signal-amplify-means into an image, the output scintillator having a curvature forming another electron lens in a side of the photoelectric face.

8. An image sensor comprising: a color scintillator according to one of claim 1, 2 and 3, the color scintillator including an optical substrate of which an incident side surface of the electromagnetic wave and the radial ray is flat and a light output side surface is curved; a photosensor receiving light generated by the color scintillator to convert the light into an electrical signal, the photosensor having a photoelectric face of which a curvature forms an electron lens; an electrical-signal-amplify-means for amplifying the electrical signal by accelerating electrons with an operation of an electric field; and an output scintillator converting the electrical signal amplified by the electrical-signal-amplify-means into an image, the output scintillator having a curvature forming another electron lens in a side of the photoelectric face.

9. An image sensor comprising: a color scintillator according to one of claim 1, 2 and 3; a photosensor receiving light generated by the color scintillator to convert the light into an electrical signal, the photosensor having a photoelectric face of which a curvature forms an electron lens; an electrical-signal-amplify-means for amplifying the electrical signal by accelerating electrons with an operation of an electric field; and an output scintillator converting the electrical signal amplified by the electrical-signal-amplify-means into an image, the output scintillator having a curved surface of which a curvature forms another electron lens in a side of the photoelectric face and a flat fluorescent output surface.

10. An image sensor comprising: a color scintillator according to one of claim 1, 2 and 3, the optical substrate partially constituting a vacuum vessel; a photosensor receiving light generated by the color scintillator to convert the light into an electrical signal, the photosensor having a photoelectric face of which a curvature forms an electron lens; an electrical-signal-amplify-means for amplifying the electrical signal by accelerating electrons with an operation of an electric field; and an output scintillator converting the electrical signal amplified by the electrical-signal-amplify-means into an image, the output scintillator having a curvature forming another electron lens in a side of the photoelectric face.

11. An image sensor comprising: a color scintillator according to one of claim 1, 2 and 3; a photosensor receiving light generated by the color scintillator to convert the light into an electrical signal, the photosensor having a photoelectric face of which a curvature forms an electron lens; an electrical-signal-amplify-means for amplifying the electrical signal by accelerating electrons with an operation of an electric field; and an output scintillator converting the electrical signal amplified by the electrical-signal-amplify-means into an image constituted with a light of which a luminescence ratio of red, green and blue varies according to intensities of the electrons, the output scintillator having a curved surface of which a curvature forms another electron lens in a side of the photoelectric face and a flat fluorescent output surface.